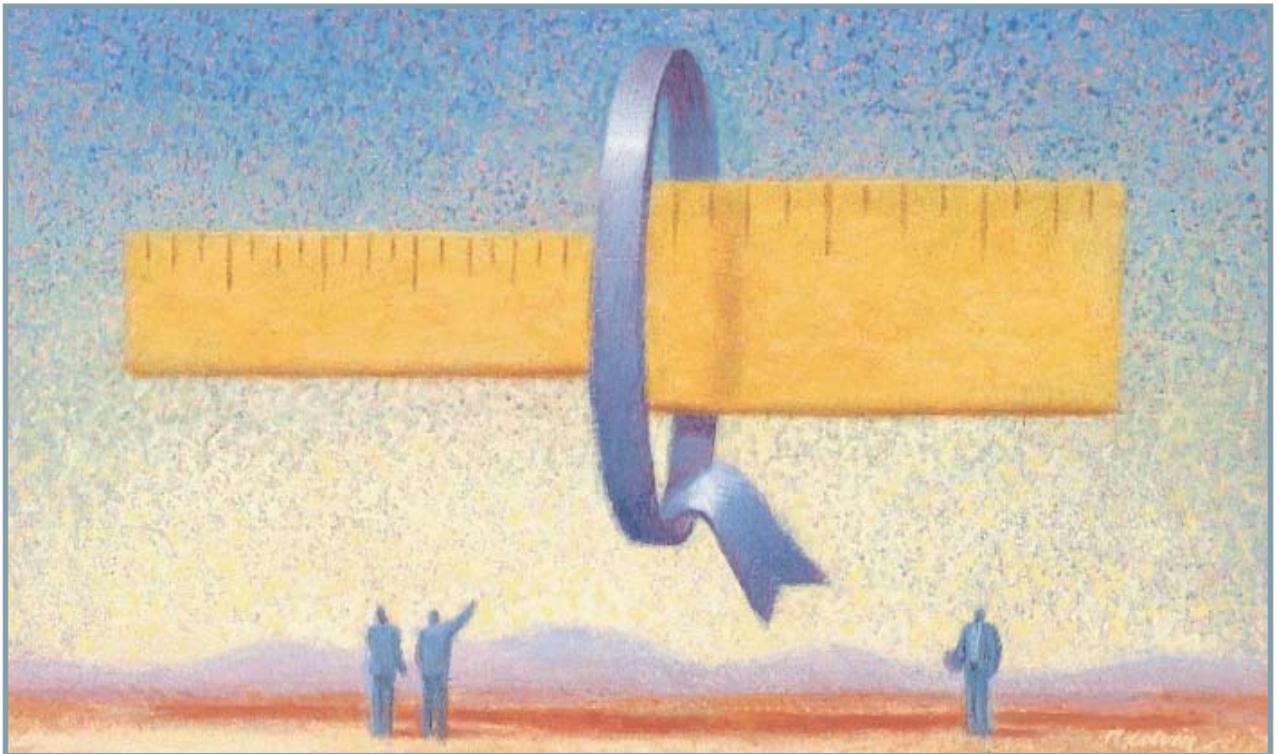


Six Sigma's

THE POPULAR QUALITY METHODOLOGY PAYS A PRICE



NOTHING PUTS A CHILL INTO system devotees more than the idea that the scheme they rely on, whether it be Total Quality Management, lean or their FranklinCovey Planner, is not “the answer.” That’s been the case in some quarters for Six Sigma, the celebrated methodology developed at Motorola in 1986 and championed most famously by former General Electric CEO Jack Welch as a way to improve productivity and cut costs by identifying and eliminating defects in manufacturing processes and other business areas.

During the late 1990s, Six Sigma—a quality improvement process based on producing fewer than 3.4 defects per million—was credited for astounding results in improving quality and reducing costs. At General Electric alone, thousands of projects were estimated to have added \$5 billion to the firm’s net earnings over its first five years of implementation. To date, Motorola pegs the financial benefits of Six Sigma at more than \$17 billion.

But is Six Sigma’s reign as the answer to company pro-

ductivity improvement coming to a close? Headlines such as “Why Six Sigma is on the Downslope” and “Six Sigma: So Yesterday” seem to support that impression. In a recent study, executive recruiting firm The Avery Point Group found that calls for managers with lean knowledge exceeded that for Six Sigma talent by almost 11%, reflecting what Tim Noble, the company’s managing principal, called “an indication that they see lean as a better and more practical hedge against today’s tough economic challenges.”

Some observers say the seeds of Six Sigma’s perceived shortcomings come not from problems with the methodology itself, but how it is applied and the high expectations it has engendered in the manufacturing world.

“To an extent, Six Sigma is kind of a religion,” notes George Haley, a business professor at the University of New Haven and director of the Center for International Industry Competitiveness. “When it focuses on the manufacturing process, it is very good. If you want to improve efficiency, cut down on failure rate and errors, that is Six Sigma’s strength.”

But Six Sigma is often applied too late, Haley observes,

Growing Pains

FOR NOT BEING A PANACEA. > BY STEVE MINTER

so that products are designed in a way that invites problems on the production floor. Product design engineers have “360-degree access” to a product in the R&D lab, but workers on the line who have to attach components and perform other tasks don’t have that same access and sometimes can’t see what is going on. The problem may be exacerbated by robotics, he notes.

Haley also criticizes the application of Six Sigma to services such as health care. For example, a nurse may be given a specific amount of time to perform a patient service. But Haley notes that patients differ and that nurses may

need to perform a different service than initially expected. “If the nurse doesn’t have time to figure out what they need, patients can get a lot of wrong treatment,” he warns. “Six Sigma should stay out of hospitals and stay out of any business where you have human-to-human interaction. Humans just aren’t programmable; they aren’t machines.”

Lean Six Sigma at Xerox

Last year, Xerox Corp. executives went through a Six Sigma exercise they gladly would have avoided. The com-

MAG Giddings & Lewis

Ellie Kemp admits she is a sports addict, so it’s not surprising she says the same elements needed for successful sports teams—talent, good coaching, a firm grasp of the fundamentals—are also the keys to success with Six Sigma. Conversely, she says the Master Black Belt at machine tool manufacturer MAG Giddings & Lewis, headquartered in Fond du Lac, Wis., companies that fail with Six Sigma likely do so because they pick the wrong people for Black Belts, don’t follow the define, measure, analyze, improve, control (DMAIC) process and don’t have the necessary executive leadership and commitment.

That hasn’t been the case at MAG G&L. Since 2002, the company has documented \$9 million in savings from its Six Sigma projects, which Kemp calls “just the tip of the iceberg” since savings from projects are only tracked for one year.

Kemp notes that her company operates in an environment where “you have to offer something to your customer that is different and better. Otherwise, they’ll go somewhere else.”



Ellie Kemp says Six Sigma has saved her company \$9 million.

When the company took Caterpillar’s offer to train employees on Six Sigma in 2002, the lead times on MAG G&L’s products—large machine tools such as horizontal boring mills, vertical turning centers and horizontal milling machines—could be 12 to 18 months. Four employees, including Kemp, were selected for black belt training to kick off the program. Through a series of Six Sigma and lean projects, the company worked to develop modular designs that would allow it to build products more quickly while permitting the customization that buyers sought. The company has also worked to reduce the number of parts required

to build its products, standardize on certain parts and improve material presentation and flow. As a result, lead times on boring mills, for example, have been cut to five months.

All MAG G&L employees receive Six Sigma training. The company has three Black Belts and 16 part-time Green Belts. Over the past eight years, the company has trained 10 Black Belts and 85 Green Belts. After two years, the Black Belts rotate into key areas of the business. “Once they understand the Six Sigma tools and how to manage projects, they have great value as managers driving process improvements and business improvement,” says Kemp.

Kemp believes Six Sigma projects may be the single most important way a company can improve its competitive position. She explains that having employees work full time on continuous improvement focuses the business on implementing change. “A person would be crazy not to want to do this,” she contends. “How many times in your career can you say you were put on the one of the most important projects in your business?”

CONTINUOUS IMPROVEMENT

pany used Six Sigma to help organize a far-reaching restructuring that cut approximately 3,000 jobs and trimmed \$200 million in costs. Employing the methodology helped Xerox be “thoughtful” about how it made the cuts and prevent harm to its operations, says Doug Burgess, Xerox’s senior vice president of corporate lean Six Sigma.

When Xerox began using Six Sigma in January 2003, the company focused on very functional projects with a high likelihood of success so that momentum would be built for using the process. Over time, the company moved into more ambitious cross-functional projects. Today, says Burgess, the company wants employees to recognize that “you can use lean Six Sigma on any process that is measurable, so you can apply it to customer satisfaction issues, cycle time, CAD generation issues.”

Burgess admits that it may not be as easy to apply Six Sigma in sales and service groups as it is in manufacturing. He says these groups traditionally focus more on managing relationships than managing processes. But with training and strong management support for using these tools, he says, they can be employed throughout the corporation. For example, he cites a project done with Xerox Global Services, where the finance department had become bogged down processing contracts that were rarely the same. When the project commenced, Burgess recalls, they found 134 contracts that were backlogged, resulting in countless hours of



Doug Burgess

overtime. “When they started that project, they were logging in almost six days for every contract they were reviewing. By applying the DMAIC (define, measure, analyze, improve, control) process, we reduced the six days to just over one and eliminated all the overtime. The billing process was improved significantly as well,” he says.

Burgess served as the sponsor for a major project involving the company’s Developing Markets Operations (DMO), the unit responsible for marketing, direct sales, distribution programs and service operations for Xerox products and services in more than 140 countries outside the United States, Canada, Western Europe, Japan and the Pacific Rim. DMO’s leaders had decided to move primarily to an indirect channel for sales, but maintain the direct channel. At the same time, the unit was changing from a legacy information management system to an Oracle-based system and also dealing with several personnel changes. “They had cycle time issues, cost issues, quality issues,” he explains. The project team focused on three areas—fulfillment, customer interface and information management—in pursuit of developing what the company called the “next generation supply chain.” Team members logged more than 70 hours gathering customer requirements. As a result of this project, DMO reduced cycle time by 33%, improved quality by 30% and reduced cost by 30%.

Burgess is a firm believer that lean Six Sigma can be applied to everyday challenges, not just major projects. “It doesn’t necessarily require big teams,” he maintains. “It is the thought process and the disciplined approach to looking at a business problem.” 

Critical Success Factors

Six Sigma experts agree on many of the critical factors for successfully implementing Six Sigma and the pitfalls that can lead to its failure:

Leadership: Initiatives such as Six Sigma require active and visible support from senior management. “As a leader, you have to put some of your skin in the game,” says Hector Arcaya, director of the business process analytics team at consulting firm Point B. He says successful deployment requires resources and political capital, and that means support from the C-suite or from the head of a specific function who takes ownership of it.

Senior managers must communicate to employees that the purpose of the Six Sigma projects is to make the company more efficient and competitive not to reduce their numbers, says George Haley, a business professor at the University of New Haven.

Strategic Alignment: “We try to pick projects that will have the greatest impact on the business,” notes Ellie Kemp, a Master Black Belt at machine tool manufacturer MAG G&L. No matter the size of a company, she points out, it needs to improve, and Six Sigma offers a proven process for continuous improvement. “If you follow the recipe and get the data, the data will tell you what to do.”

The Right Personnel: “I tell Green Belts and Black Belts that as powerful as Six Sigma is, it doesn’t improve anything,” says Bob Rome, lean/Six Sigma manager for Miniature Precision Components (MPC), a molder and assembler of plastic components. “People make improvements.” He says Black Belts and Green Belts need not only training in the Six Sigma methodology but also team leadership and communication skills so that

they can shepherd these collaborative projects.

Measurement: “It is fair to expect business results from Six Sigma,” says MPC’s Rome. “Otherwise, there is no value being added.” In developing projects, leaders state the business problem, outline project objectives, list the benefits and any associated hard savings and state how the savings will be calculated. “All of the savings we track are validated by our finance department,” he adds.

In the end, say these experts, no one methodology such as Six Sigma holds the key to business success. “Six Sigma is just one of the tools that businesses should have in their portfolio for managing and executing their business,” says Point B’s Arcaya. “It is definitely a very useful tool if used appropriately but it is not a panacea.”

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